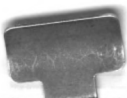


**DESIGNS FOR
MOSAIC AND
TESSELLATED
PAVEMENTS WITH
AN ESSAY ON...**

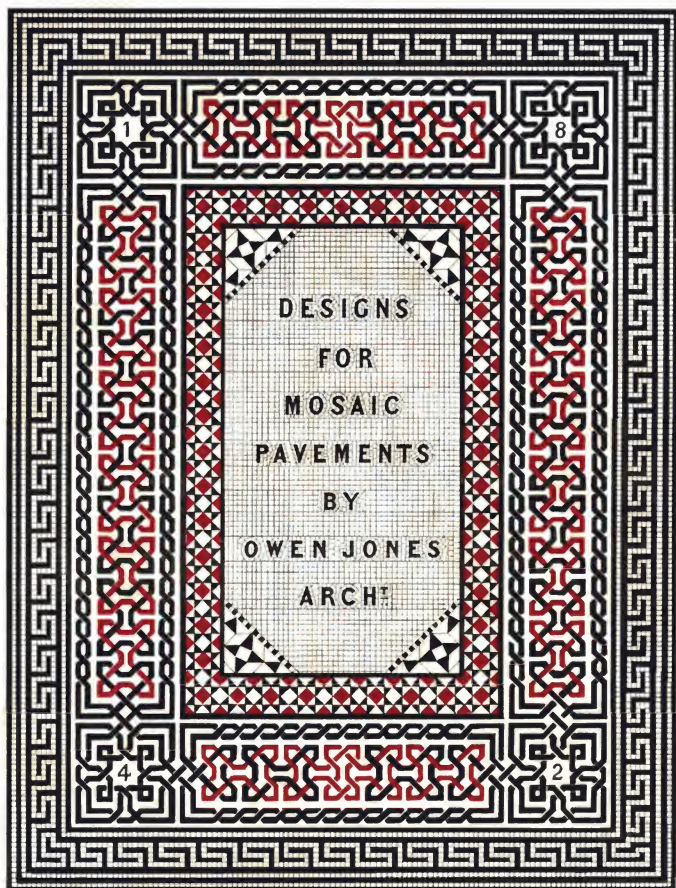
Owen Jones, F O Ward



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PRINTED IN COLORS BY OWEN JONES 9 ARGYLL PLACE

PUBLISHED FOR THE PROPRIETOR BY J. WEALE, HIGH HOLBORN, LONDON, 1842.

DESIGNS
FOR
MOSAIC AND TESSELLATED
PAVEMENTS:

BY
OWEN JONES, ARCHT

WITH AN ESSAY ON THEIR MATERIALS AND STRUCTURE,

BY F. O. WARD.



LONDON:
PUBLISHED BY JOHN WEALE, HIGH HOLBORN,
FOR J. M. BLASHFIELD.

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LIST OF PLATES.

- I.—A series of borders, formed of quadrilateral tesserae, and adapted from those found at Pompeii, in which the pattern is of one colour only. The introduction of a second colour, interlacing with the first, is a feature of the Mauresque mosaics.
- II.—These borders, like the former, are characterised by the Mauresque interlaced colouring, which produces a very agreeable variety of the common Greek fret.
- III.—The four outer borders of this series are composed of quadrilateral and triangular tesserae; the fifth contains, in addition, cuneiform, or wedge-shaped pieces. By the combination of these three forms the most intricate patterns, and figure-subjects, may be executed. The third border is from a painting on a column at Thebes, which formed part of a Christian church.
- IV.—These borders are arranged from a fragment in the Museum at Naples. The patterns are shaded so as to appear in relief; for which reason they are, perhaps, more suitable for panels on walls than for pavements.
- V.—The centre of this pavement is arranged from another fragment in the Museum at Naples.
- VI.—A pavement which may be formed entirely of quadrilateral pieces. The border is arranged from a pavement at Pompeii, where the pattern is all black. The centre is an adaptation from the Mauresque.
- VII.—A pavement of quadrilateral pieces.
- VIII.—A pavement, suggested by the interlacing patterns of the Moorish mosaics. The border is formed of quadrilateral tesserae, and the centre of rhomboids, or of equilateral triangular pieces.

LIST OF PLATES.

IX.—These borders are formed with polygonal pieces, larger than those employed in the foregoing designs, and dovetailing into each other. An endless variety of patterns may be produced by changing the colours only, the arrangement of the pieces remaining the same.

X.—The centre of this pavement is formed upon the principle of the Moorish interlacing patterns; and, as in the borders shewn in Plate IX., the most diversified effects may be produced by varying the colours of the tesserae, without altering their relative position.

Note.—In these designs it has been sought rather to give specimens of the different forms and methods by which diversities of pattern may be obtained, than particular examples to be followed. Persons interested in the subject may, by a re-combination of these elements, produce new designs with the greatest facility.

TESSELLATED PAVEMENTS,

ANCIENT AND MODERN.

THE object of the following pages is to call public attention to a new material for Tessellated Pavements, and to an improved method of constructing the same, by the adoption of which this ancient and esteemed mode of decoration may be re-introduced, at a moderate cost, for the embellishment of our modern buildings. The improvements in question will, it is confidently believed, enable the modern architect to execute mosaic floorings, equal in point of extent and elaborateness to the most celebrated of the remains that have descended to us from antiquity, and very far superior to these in brilliancy and variety of colouring, in the accurate co-adaptation of the pieces, and in the uniform durability of the surface.

In order to arrive at a just conclusion on this subject, it will be necessary in the first place to bestow some attention on the materials and structure of the old Roman Tessellated Pavements, as described by Vitruvius, and still to be traced in the remains existing in various parts of the country, and in the specimens preserved at the British Museum.

The materials of the best and costliest pavements at Rome (such, for example, as those still remaining in the baths of Caracalla), are coloured marbles of various kinds, differing considerably from each other in hardness and durability. The inferior pavements, found scattered through Britain, France, and other parts of Europe, and along the northern coast of Africa, are usually made of such coloured stones as the neighbourhood happened to supply, with the exception only of the red tesserae, which are almost invariably of burnt clay. Thus, in the celebrated Roman pavement which was discovered in 1793, at Woodchester, in Gloucestershire, the grey tesserae are of blue lias, found in the vale of Gloucester,—the ash-coloured tesserae of a similar kind of stone, often found in the same masses with the former,—the dark brown of a gritty stone, met with near Bristol, and in the forest of Dean,—the light brown of a hard calcareous stone, occurring at Lyptat

(two miles from the site of the pavement),—and the red tesserae, as usual, of fine brick. These materials differ from each other in point of hardness even more than the coloured marbles of the costlier pavements at Rome; and it is evident that a surface composed of such heterogeneous materials must wear unequally at different parts, and ultimately fall into hollows wherever colours produced by the softer kinds of stone are employed.

If this remark should be met by a reference to remains of ancient pavements, discovered in this country after a lapse of sixteen centuries from their first construction, and still retaining a level unworn surface, it is obvious to reply, that the mere length of their duration gives no force to the objection, seeing that, during by far the greater portion of the time, these pavements have lain buried; and, further, that even when in use they formed floors to the baths and best chambers of the residences of Roman provincial governors, and were therefore, doubtless, subject to very inconsiderable traffic. The entrance hall of a modern Club-House would afford a much more trying test of durability; and it will hardly be disputed that a pavement composed of heterogeneous materials would in such a position be liable to wear unequally.

The next point to be observed with reference to the Roman Tesserae, is the want of uniformity in their size and shape, and the consequent irregularity of their junctures, especially in the more minute portions of the design. Whoever will take the trouble to examine the choicest specimens of old pavements at the British Museum (as, for example, one presented by Mr. Lysons, which formed part of the Woodchester pavement referred to above) will perceive that the tesserae, instead of coming into contact by smoothly-ground and equal sides, are in many places separated by broad uneven lines of cement. In some parts the intervals are of such width that the cement, which in a good pavement should be scarcely seen, forms at least a fourth of the visible surface. It is scarcely necessary to point out the effect which this net-work of brown cement-lines, running through the whole design, and mixing a muddy hue with every tint, must have in diminishing the purity of the colours, and in deadening the sharpness and brilliancy of their contrast. It is much as if a picture when finished, should be crossed and re-crossed all over with lines of brown paint.

Proceeding from these remarks on the materials of the Roman Pavements to consider the mode of their construction, we shall find that, while the effect produced was imperfect, the means employed for its production were costly and inadequate to the end proposed.

Vitruvius, in the first chapter of his seventh book on Architecture, after describing the manner in which the foundation of the pavement should be formed, goes on to say, that on the topmost layer of cement the tesserae are to be laid—care being taken to keep the surface flat and true with the level; that, in the next place, all unevennesses and projections are to be worked down by rubbing and polishing; and that, lastly, a layer of cement is to be spread

over the whole and scraped off again (in order, it would seem, to fill up any cavities in the cement between the tesserae, and to render the surface as smooth as possible all over).*

We need not dwell at length on the time and trouble that it must have taken to set each tessera separately in the cement, and to try the surface with the level after every few pieces were laid. With respect to the subsequent operation of grinding down and polishing the surface of the work, it must have been in most cases (and particularly where stones of a hard and gritty nature were employed) the most tedious and laborious part of the process. We shall presently see that all these difficulties are obviated by the employment of the newly-invented material and mode of construction, which we will next proceed to describe—taking, however, in the first place, a rapid survey of the various experiments which preceded this invention, and of the successive improvements by which it has been gradually brought to perfection.

About forty years ago, a patent was obtained by Mr. C. Wyatt for a mode of imitating Tessellated Pavements by inlaying stone with coloured cements. Floors thus constructed, however, were found liable to become uneven in use, in consequence of the unequal hardness of the materials; which defect prevented their general adoption. Terra cotta inlaid with coloured cements has also been tried, and found liable to the same objection.

During the last ten years, cements coloured with metallic oxydes have been used by Mr. Blashfield to produce imitations of the ancient Tessellated Pavements; and, for work protected from the weather, the material appears to have answered tolerably well; but for out-door work, required to stand frost, it has been found necessary to employ Roman cement, the dark brown of which gives a dingy hue to all colours mixed with it. This, with some other practical difficulties, has interfered with the success of the plan.

Bitumen coloured with metallic oxydes has also been tried by Mr. Blashfield as a material for ornamental floorings. The groundwork of the pattern was first cast in any given colour, and the interstices were afterwards filled up with bitumen of various other shades. But this method was even less successful than the former; the contraction and expansion of the bitumen soon rendered the surface uneven; the dust, trodden in, obscured the pattern; and the plan, besides being ineffectual, was expensive.

Three years ago, Mr. Blashfield succeeded in constructing an extensive and elaborate inlaid pavement, on the plan of the Venetian *Pisé* floors. It was made after designs

* This is the general sense of the passage according to the best commentators. The phraseology in the original is here very obscure, and has probably suffered from the carelessness of early transcribers.

furnished by H. S. Hope, Esq., at whose country-seat, Deesdine, in Surrey, it was laid down. It is still in good preservation.*

In the same year (1839) Mr. Singer, of Vauxhall, obtained a patent for a mode of forming tesserae, by cutting, out of thin layers of clay, pieces of the required form, which are afterwards dried and baked in the usual way. His patent also included an improved method of uniting the tesserae with cement, so as to form slabs of convenient size for paving. He has executed in this manner some very admirable mosaics, and his invention must be regarded as one of the most important steps towards the revival of the art in this country.

We now come to the discovery which led to the invention of the tesserae particularly referred to throughout this treatise.

In 1840, Mr. Prosser, of Birmingham, discovered that if the material of porcelain (a mixture of flint and fine clay) be reduced to a dry powder, and in that state be subjected to strong pressure between steel dies, the powder is compressed into about a fourth of its bulk, and is converted into a compact solid substance, of extraordinary hardness and density: much less porous, and much harder than the common porcelain, uncompressed, and baked in the furnace.

This curious and as it has since proved very important discovery, was first applied to the manufacture of buttons, to supersede those of mother of pearl, bone, &c. The buttons thus stamped out of porcelain powder are capable of resisting any pressure to which they are subject in use, and are more durable, as well as cheaper, than buttons of the materials ordinarily used.

The applicability of this ingenious process to the manufacture of tesserae for pavements soon afterwards occurred to Mr. Blashfield; who made arrangements with Messrs. Minton and Co. (the manufacturers appointed to work Mr. Prosser's patent), for a supply of small cubes made according to the new process; these he submitted to various trials and experiments; and having found them in every respect suitable for the purpose, he has recently, in conjunction with Messrs. Wyatt, Parker, and Co., carried out the invention on an extensive scale. Tesserae of various colours and forms—red, blue, yellow, white, black, brown; quadrilateral, triangular, rhomboidal, hexagonal, &c.—have been manufactured on this principle in large numbers; pavements of considerable extent have already been constructed with them; and they have been found to possess the following advantages:—

* A floor of a very similar kind was laid down at Mr. Hope's mansion, in Duchess Street, about sixty years since, and it is said to be still in excellent condition.

First, being formed in similar steel dies, they are of uniform size and shape, so that they can be fitted together accurately in the laying down of the most complicated designs. Secondly, being all composed of the same material, variously coloured, they are all of precisely equal hardness, so that pavements made with them are not liable to fall into hollows in use. Lastly, owing to the effect of the intense pressure under which they are made, they are quite impervious to moisture, of a flinty texture throughout, and, in a word, to all intents and purposes absolutely imperishable.

In these several respects, their superiority to the Roman tesserae (which, as we have seen, were shaped imperfectly by hand, and differed from each other in hardness,) must be manifest to the reader. Nor less conspicuous is the superiority of the modern process of uniting the tesserae to form pavements.

For this purpose (instead of spreading the cement on the surface to be paved, and laboriously setting each single tessera in it, according to the directions of Vitruvius), the pavement is first put together, face downward, on a smooth surface, so that the tesserae find their level without any trouble to the workman; and as soon as a sufficient portion of the design is finished, it is backed with fine Roman cement, which is worked in to fill the crevices between the tesserae; the pavement is thus formed into smooth flat slabs of convenient size (according to Mr. Singer's method), and these are laid down on a foundation properly prepared in the usual way.

One peculiar feature of this process is, that private persons, if so inclined, may set out their own pavements in the coloured tesserae, leaving it for a workman afterwards to cement and lay down the slabs. Fine mosaic work for the tops of tables, for illuminated monuments, &c., may be made in the same manner with a superior kind of tesserae, glazed on the surface, and richly ornamented in gold and colours.

Pavements thus constructed are singularly beautiful. The outline of the design strikes clearly and sharply upon the eye, and the brilliant colours of the tesserae are reflected from the level surface, uninterrupted by those broad, uneven lines of cement, which in the Roman pavements detract so much from the general effect. The truth of every line and angle in the figure, and the just proportion of all its parts, however complicated and various, impress the mind with an agreeable sense of order and precision. Such, indeed, is the exactness and facility of the workmanship in these pavements, that the oblique and intricate intersections of the Mauresque designs are as readily executed as the simple rectangular patterns of the Pompeian style. Even the scrolls and twisted guilloches, the quaint emblematical devices, and grotesque representations of horses, warriors, &c., found in the most elaborate of the Roman pavements, may be accurately imitated with the new stamped tesserae.

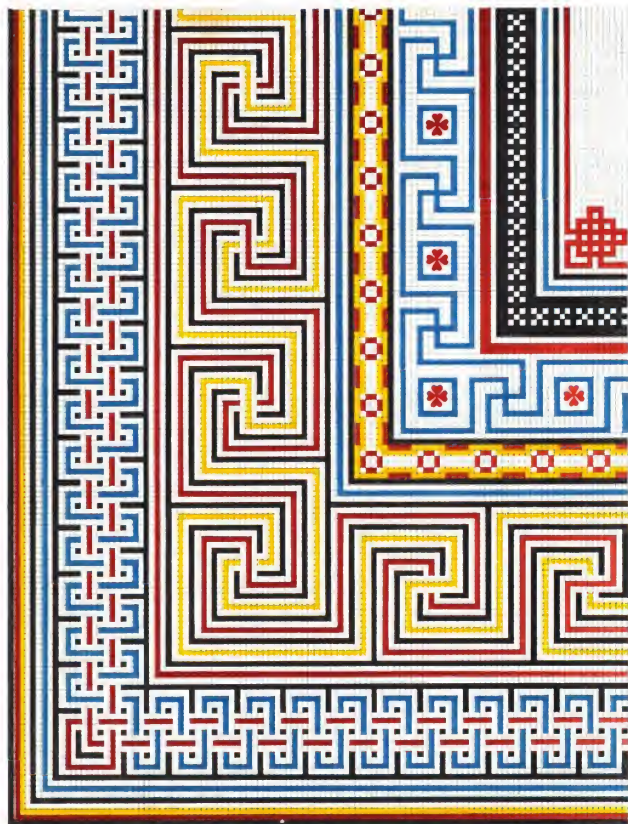
The Roman designs, however, have little to recommend them to the modern artist, beyond their historical interest. Even the earliest of them, which are the best, were produced subsequently to the Roman invasion of Greece, when art was everywhere declining; and they abound with indications of the extravagant and licentious taste which grew up amidst the general corruption of Roman manners, occasioned by the rapid influx of foreign wealth and foreign habits of luxurious excess.

When designs after the antique are required, the elements of them should rather be sought in the beautiful decorations of the Etruscan vases, and in the admirable remains of Greek art in general, during its best period—*i. e.* from about 400 to 200 B. C., or during the time of Phidias, Praxiteles, and their immediate successors. (Such are the models which have guided the composition of the magnificent Tessellated Pavement designed by Mr. Barry, and executed under his direction by Mr. Singer, for the hall of the New Reform Club: a pavement so beautiful and so generally admired that it can hardly fail to give an impulse to the re-introduction of mosaic decoration, hitherto so sparingly employed by modern architects.)

For Mauresque designs, the mosaic dados of the Alhambra may be advantageously consulted. They are executed in glazed earthen tiles, variously coloured, shaped with considerable exactness, and joined with cement. They present many examples of ingenious arrangement and well-contrasted colouring.

But, whichever of these various styles the architect may adopt, he will find that, for the realisation of his conceptions, there is no material which presents so many advantages as the compressed porcelain tesserae—whether on account of their uniform size and shape—the purity and brilliancy of their colours—or their extreme hardness, and unalterable durability.





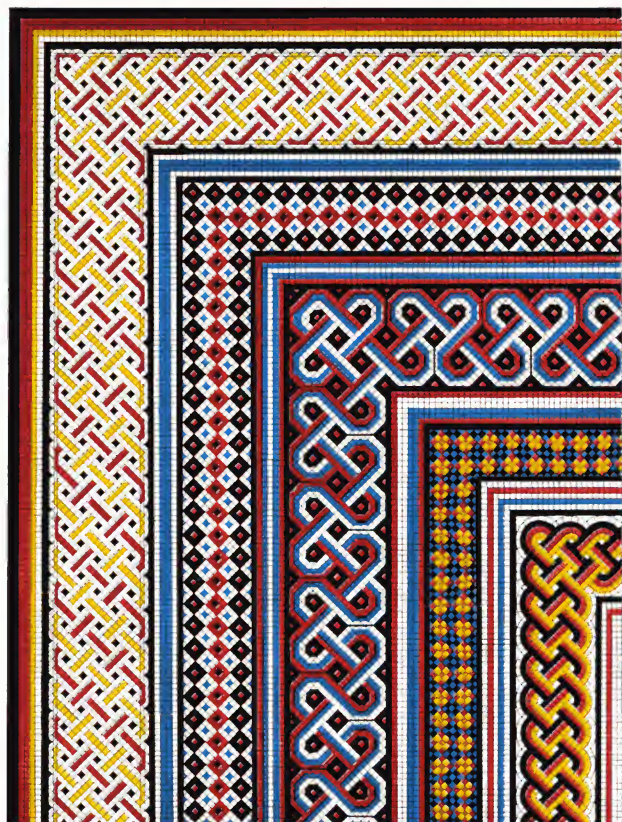
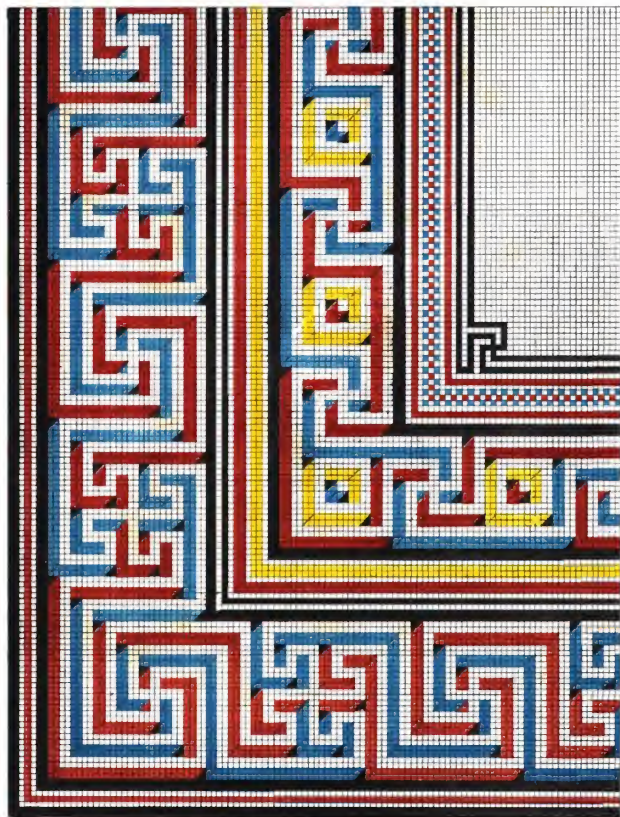


PLATE 4.



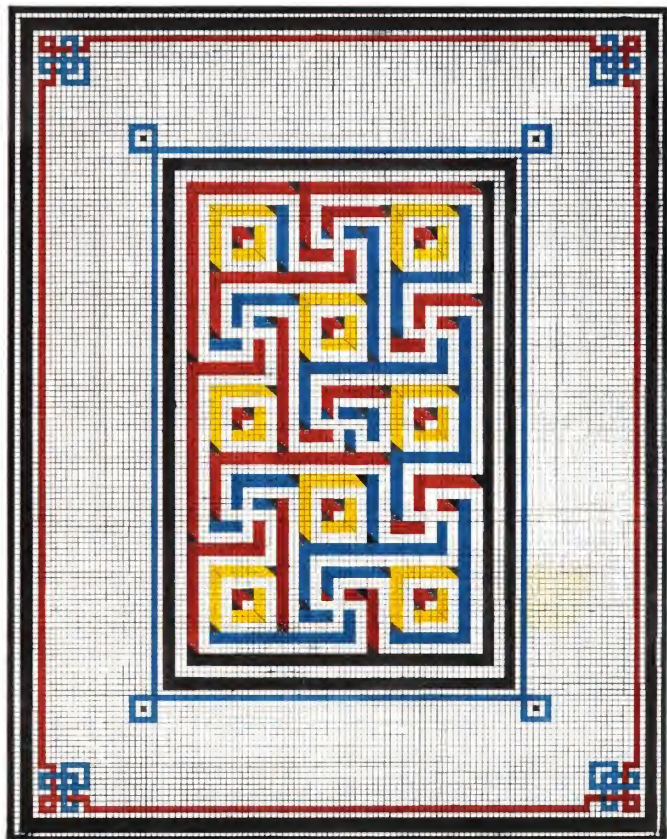
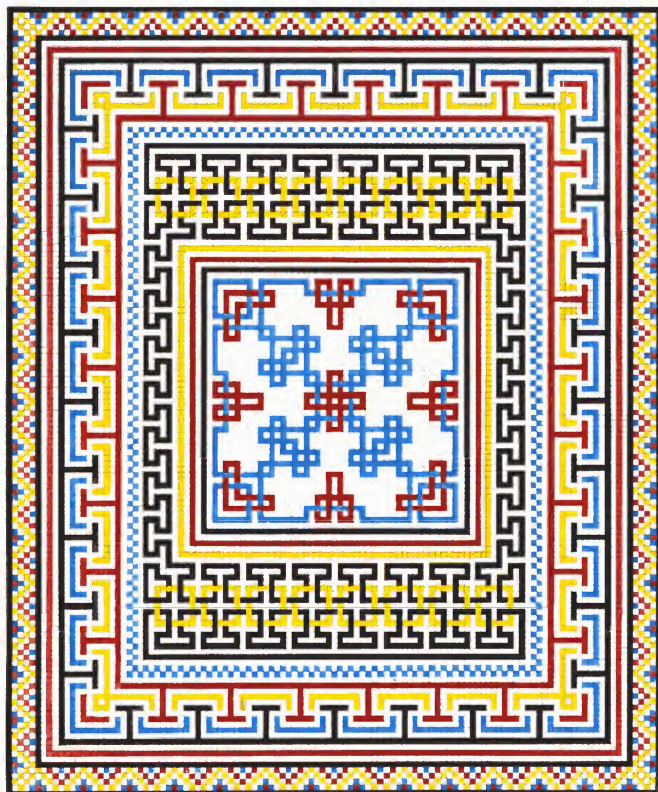
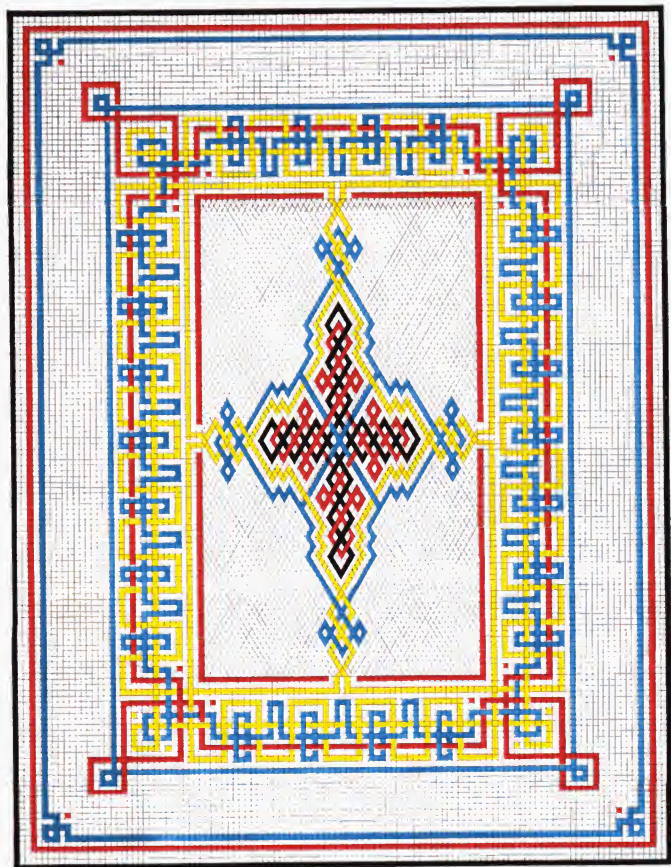
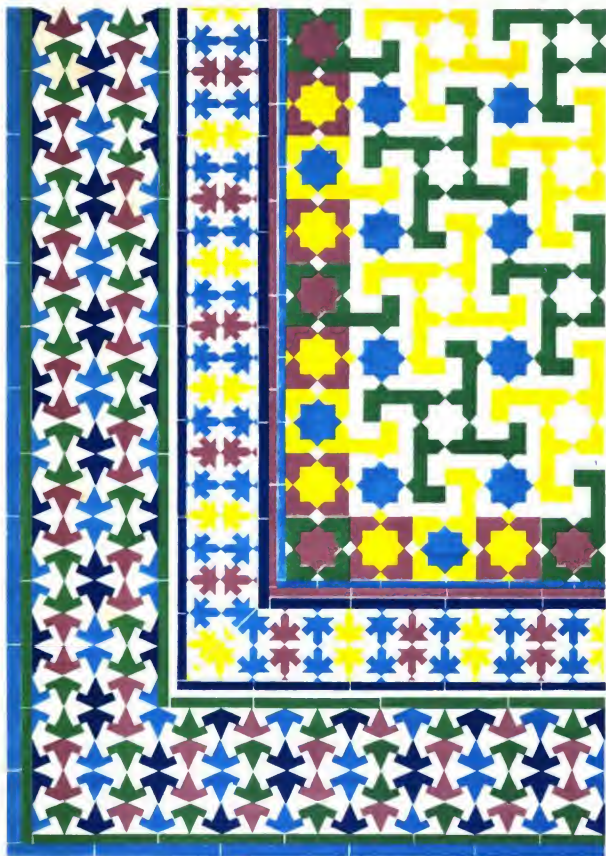


PLATE 6

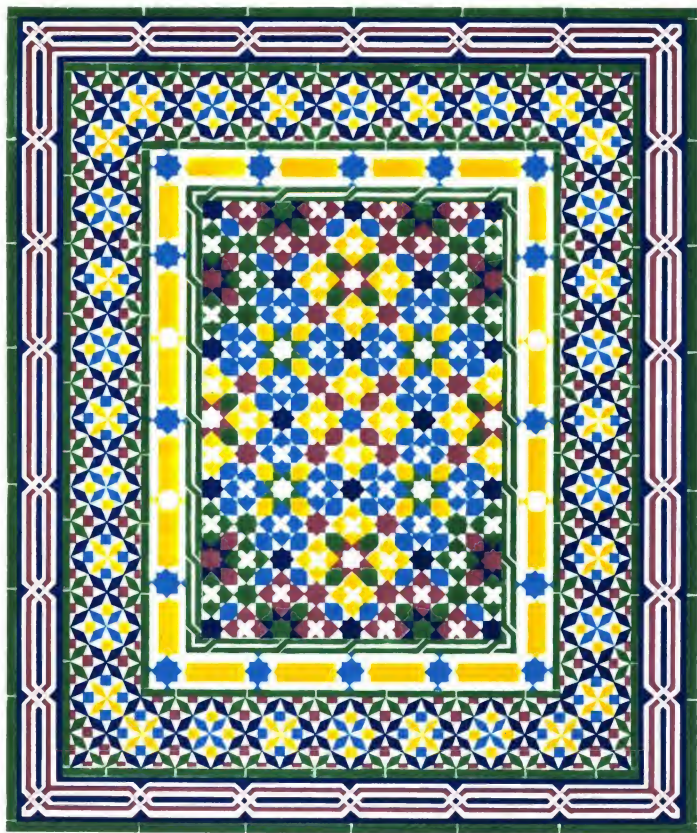








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